STATE OF CALIFORNIA — THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

June 20, 2006

Mr. Henryk Olstowski
Assistant Manager, IID Energy
Imperial Irrigation District
485 E Villa Road
El Centro, CA 92243

Dear Mr. Olstowski:

DATA REQUESTS 1 to 32 FOR THE EL CENTRO UNIT 3 REPOWER (06-SPPE-2)

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff is asking for the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

The requested information is in the technical areas of air quality, biological resources, land use, noise, public health, transmission system engineering, visual plume modeling, and waste management. The Cultural Resources data requests will follow shortly. Written responses to the enclosed data requests are due to the Energy Commission staff on or before July 20, 2006.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, you must send a written notice to me within 10 days of receipt of this request. The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 651-8891, or email me at mdyas@energy.state.ca.us.

Sincerely,

Mary Dyas, Project Manager
Systems Assessment and
Facilities Siting Division

Enclosure

Technical Area: Air Quality
Author: Tuan Ngo, P.E.

BACKGROUND

Section 6.1.2.4 of the Application for Small Power Plant Exemption (SPPE), and its Appendix 6.1E indicate that the El Centro Unit 3 Repower Project will employ an existing cooling tower, which would be retrofitted with modern drift eliminators to restrict the drift to 0.001 percent of the water recirculation rate. Even with this retrofitting, the application calculates that the cooling tower will emit approximately 2.34 tons per year of particulate matter (PM10). Because the area is non-attainment with respect to the state and federal PM10 standards, best available control technology (BACT) and offsets are required for PM10 emission sources.

The current state of the art drift eliminators can achieve a drift rate of less than 0.0005 percent, which is half of the proposed drift rate. This type of drift eliminator is currently deemed as BACT by other air pollution control or air quality management districts in California.

DATA REQUEST

1. Please discuss why the proposed drift eliminator was chosen.
2. Please discuss the feasibility of utilizing a 0.0005 percent drift eliminator on the Unit 3 cooling tower.
3. Table 6.1-24 lists the projected new and historical emissions of various equipment for Unit 3. This table shows that the proposed Unit 3 Repower cooling tower PM10 daily emissions are lower than the historical daily PM10 emissions, but its annual PM10 emissions are higher than the historical annual PM10 emissions.
    a. Please provide the calculations to show the proposed and historical cooling tower daily and annual PM10 emissions, and an explanation of why the new annual emissions are expected to be higher.

BACKGROUND

Section 6.1.4 of the SPPE states that sulfur dioxide (SOx) emission reduction credits will be utilized to mitigate the project's PM10 emission increases. The applicant proposed to provide 2.5 lb of SOx emission reduction credits for every pound of new PM10 emissions. While we believe that SOx emission reduction credits can be used to mitigate new PM10 emissions, we are concerned that the proposed 2.5:1 trading ratio of SOx to PM10 may not be adequately justified without an analysis to support its use.

DATA REQUEST

4. Please provide an analysis demonstrating that using the proposed 2.5:1 SOx for PM10 trading ratio would mitigate the project's new PM10 emissions impacts in the existing ambient air quality setting.

Technical Area: Biological Resources
Author: Misa Ward

BACKGROUND

The burrowing owl is considered a California Species of Concern by the California Department of Fish and Game and a Bird of Conservation Concern by the U.S. Fish and Wildlife Service. The SPPE Application for the El Centro Unit 3 Repower Section 6.3, page 6.3-17, notes that a burrowing owl pair resides on the southern border of the IID property. This page also indicates that mitigation for potential impacts is presented in Section 6.3.3. However, no specific mitigation measures for burrowing owls are given. Other SPPE applications in the vicinity, such as that of the Niland Gas Turbine project (06-SPPE-1), have noted similar potential impacts and included species-specific mitigation measures for burrowing owls. In addition, past biological resources reports for the El Centro Unit 2 Repowering project (90-SPPE-2) indicate a likelihood for additional burrowing owls on the ECGS site.

DATA REQUEST

5. Please provide a discussion of the proposed mitigation measures for burrowing owls considering the likelihood of more than one active burrow on-site, including a discussion of the method used to create relocation burrows, if necessary.

BACKGROUND

The razorback sucker is a state and federal listed endangered fish species. The discussion of Impact BIO 11 - Water Uptake and Discharge and Razorback Sucker on page 6.3-35 indicates that the "potential for federal and state 'take' due to entrainment in the IID canal system has been provided for through IID's participation in the LCRMSCP." Given IID's participation in the Lower Colorado River Multi-Species Conservation Program (LCRMSCP), the impact to razorback sucker was considered not significant.

DATA REQUEST

6. Please provide a description of the Lower Colorado River Multi-Species Conservation Program, its applicability to the project area, and its specific mitigation measures regarding the razorback sucker.
   a. Please describe the measures used to avoid "take" related to the razorback sucker.

Technical Area: Land Use
Author: Amanda Stennick

BACKGROUND

Page 6.2-5 in the Land Use section states that the City of El Centro is updating their zoning ordinance to bring it into compliance with the 2004 General Plan and expects to adopt the ordinance by May 2006. As the applicant states in the SPPE, existing zoning data were used to prepare the document and should be updated once the City adopts the new zoning code.

DATA REQUEST

7. Please provide an update consisting of revised text and maps, based on the recently adopted City of El Centro zoning ordinance for all relevant zoning information contained in the SPPE, including a revised Figure 6.2-4 (Zoning Within A One-Mile Radius of the Project).

Technical Area: Noise
Author: Steve Baker

BACKGROUND

Energy Commission staff evaluates power plant operational noise impacts on sensitive receptors by comparing the noise levels at the receptor with the power plant operating to the ambient noise levels at the receptor before the project is constructed. Specifically, staff compares power plant noise to the background (L_{90}) noise levels at the receptor during the nighttime hours, when people are most likely to be annoyed by excessive noise. To eliminate the effects of short-term anomalies, staff typically considers the average of the four quietest contiguous hours of the night for this comparison.

In describing the pre-project ambient noise survey results, the Application presents only broadly averaged figures. Background noise levels at nearby sensitive receptor LT-1 are given as only a single 25-hour average figure. In order to perform its standard analysis, staff needs to see the hourly averages throughout the 25-hour monitoring period.

DATA REQUEST

8. Please provide a more detailed summary of the ambient noise survey results at monitoring location LT-1, the residence at 1017 North 3rd Street. Specifically, show the hourly average values for L_{90} and L_{eq} (i.e., L_{eq} represents average noise level), as a minimum, throughout the 25-hour monitoring period.

BACKGROUND

In predicting noise impacts from project operation on sensitive receptors, the Application displays calculated noise levels at the four project property lines, and at the "closest residence," located to the west of the project (Application, Table 6.7-7). This residence is described elsewhere (Application, § 6.7.2.2, p. 6.7-7) as LT-1, which is approximately 2,600 feet from the project. The Application further describes a residence, named ST-1, located approximately 2,300 feet to the northeast of the project (Application, § 6.7.2.2, p. 6.7-6).

Staff believes that project noise impacts on the residence at ST-1 may be significantly greater than those on LT-1 because 1) ST-1 is nearer the project than LT-1, and 2) project noise at the west property line (nearest the residence at LT-1) is calculated at 55 dBA, and at the north property line (nearest the residence at ST-1) at 68 dBA (Application, Table 6.7-7), more than twice as loud. In order to evaluate worst case noise impacts on nearby residences, staff must know the calculated project noise level at the residence ST-1.

DATA REQUEST

9. Please provide a calculation of expected noise levels from project operation at monitoring location ST-1, the residence at 2161 North Dogwood Road, expressed in terms of L_{eq}.

Technical Area: Public Health
Author: Alvin Greenberg

BACKGROUND

It is unclear if there are any existing back-up diesel generators or fire pumps at the project site. Both of these types of sources would generate diesel exhaust in the form of diesel particulate emissions, which should be assessed for cancer risk in the risk assessment and cumulative risk assessment.

DATA REQUEST

10. Please provide information on any back-up diesel generators or fire pumps proposed for the project site, including estimated emissions and health risks.

BACKGROUND

Health risks due to diesel emissions from vehicles and equipment used in the construction phase of the project should be assessed.

DATA REQUEST

11. Please conduct a health risk assessment on diesel emissions from construction vehicles and equipment.

Technical Area: Transmission System Engineering
Authors: Ajoy Guha, P.E. and Mark Hesters

BACKGROUND

Without a complete description of the proposed transmission interconnection staff will be unable to determine whether or not the proposed project would have a significant impact on the environment. While the proposed interconnection is adjacent to the proposed project site, the application did not include a detailed description and/or electrical diagram of the interconnecting facilities for the new generator. A discussion of new interconnection facilities and whether the interconnection will require an expansion of the existing El Centro switching station would allow for the analysis of the potential impacts of the proposed project.

DATA REQUESTS

12. Please provide a complete electrical diagram of the interconnecting facilities between the new generator and El Centro switching station showing all equipment including bus duct connectors, the 15 kV switchgear, the breakers, the disconnect switches, the generator step-up (GSU) transformer, the 92 kV transmission line as well as its termination breakers and their respective ratings.

    a. Please provide an electrical one line diagram of the El Centro switching station showing the arrangement of buses, the breakers, the existing generators with their ratings, all the transmission lines and the step-up transformers.

        i. Should an expansion of the El Centro switching station be required to accommodate the new generating unit, please provide a description and the necessary drawings of the expansion in the electrical one line diagram.

13. Please provide an engineering drawing of the poles or structures of the proposed 92 kV transmission line between the new GSU transformer and the El Centro generating station showing ground clearances, and the size of the new insulators and conductors.

BACKGROUND

The California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." For the identification of indirect or downstream transmission impacts, staff relies on the System Impact and Facilities Studies as well as review of these studies by the agency responsible for insuring that the interconnecting grid meets reliability standards, in this case, the Imperial Irrigation District (IID). The studies analyze the effect of the proposed project on the ability of the transmission network to

meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements, the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete System Impact Study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

According to the System Impact Study," The interconnection of the proposed generating facility to the existing 92 kV transmission system was found to have no significant impact on the IID system as shown by the lack of overload and voltage violations." The study also found that the proposed project would have minimal affects on the transmission networks of neighboring utilities. However, staff is concerned that the study is not complete and does not provide mitigation measures for identified overloads.

The System Impact Study identified overloads in some transmission elements (Page 5 of the system impact study report), but did not address the mitigation measures required to eliminate the overloads. The study also did not analyze the effect of the potential outage of the El Centro switching station 92 kV bus where about twelve 92 kV transmission lines, two step-up transformers (230/92 kV & 161/92 kV), and four El Centro generators are now connected. Because this outage was not studied, no mitigation for a possible overload was identified, and impacts of the proposed project may have been missed. Staff has included a list of other contingencies or outages that were not included in the System Impact Study (located after Data Requests 16 and 17).

DATA REQUESTS

14. The SIS states, "Generation higher in IID's queue was included". Please provide a list of IID's queue generation included in the 2009 Power Flow base case. If necessary, please file for confidentiality when submitting this information.

15. The SIS indicates there are several overloads in the IID system that are pre-project or would occur without the proposed project. Three of these pre-project overloads are exacerbated by the addition of the El Centro 3 Repowering Project while other pre-project overloads are reduced (See Page 5 of the SIS).

    a. Please explain how the study concluded that the proposed project has "no significant impact on the IID system as shown by the lack of overload and voltage violations," when the study identifies several overloads.

    b. Where the study identifies overloads (pre- or post- project), please identify the planned mitigation measures and implementation schedule and discuss the effect of the proposed generating project on the IID system with the planned mitigation.

16. The SIS did not analyze several critical contingencies in the Power Flow analysis (see contingency list below). Please explain how the study concluded that the proposed project would have no significant impact on the IID system when these contingencies were not studied.

    Contingency List for Data Request 16

    - El Centro switching station 92 kV bus fault.
    - El Centro switching station 161 kV bus fault.
    - El Centro switching station 230 kV bus fault.
    - El Centro – Avenue 58 and El Centro – Niland 161 kV lines.

17. The SIS did not provide the transient stability plot diagrams or generator rotor angle plots for the full load rejection case, which should include both the new CTG unit 3 and the STG unit 3. Also the transient stability studies for the 92 kV and 161 kV systems were performed using a 4-cycle fault clearing time which is typically used for 230 kV and higher systems.

    a. Please explain why the 4-cycle clearing time was used instead of the more typical 8-cycle or greater and whether or not changing the clearing time on the analysis would affect the conclusions of the study for the contingencies listed below.

    Contingency List for Data Request 17

    - Loss of GSU transformers for the new CTG unit 3 and the STG unit 3.
    - El Centro switching station 92 kV bus fault.
    - El Centro switching station 161 kV bus fault.
    - El Centro switching station 230 kV bus fault.
    - Loss of El Centro-Pilot Knob 161kV line.
    - Loss of El Centro-Niland and El Centro – Avenue 58 161 kV lines.

BACKGROUND

The SPPE's short circuit study states,

> "...92 kV circuit breakers with a 63kA interrupting rating should be used for the ECGS Unit #3 interconnection. Future system expansion plans will result in a further increase of the short circuit duty."

Staff is concerned that breaker ratings may or may not be adequate for symmetrical faults (three-phase faults) depending on the aging and present condition of the existing breakers, and for asymmetrical faults (line-to-ground faults) existing breaker ratings

(40,000 Amps) may not meet industry standards or American National Standards. Staff is also not confident that the System Impact Study included a complete transient stability study and post-transient voltage analysis.

DATA REQUESTS

18. The short circuit study report shows that post-project symmetrical fault level (37,028 Amps) at the El Centro switching station 92 kV bus would be about 93 percent of the breaker interrupting ratings (40,000 Amps). Similarly at the Euclid substation the post-project fault current was 19,314 Amps, about 97 percent of the breaker interrupting rating of 20,000 Amps. Please verify and explain why IID considers that the existing 92 kV breakers at the El Centro switching station or at the Euclid substation should be adequate for the post-project fault levels, symmetrical or asymmetrical, or whether there are any future plans, including the schedule, for reduction of fault levels or replacement of the breakers with higher interrupting ratings.
19. The study did not include a Post-transient Voltage analyses report. Please explain whether or how the inclusion of this report would affect the conclusions of the study.
20. The study states, "As the minimal changes in tie-line flow indicate, the impact on neighboring utilities was minimal with the addition of the project." Please describe any efforts to coordinate the study or to discuss the study results with any of the neighboring utilities and whether or not these utilities have submitted any comments on the study.
21. Please provide pre- and post-project Power Flow Diagrams for the above or any overloads (normal, n-1 or n-2) identified in the study. Please provide electronic copies of *.sav and *drw,*dyd and *swt GE PSLF files and EPCL contingency files, if available.

Technical Area: Visible Plume Modeling
Author: Tuan Ngo, P.E.

BACKGROUND

The visible water vapor plume discussion provided in the Visual Resources section of the SPPE (Section 6.11) states that the potential for formation of visible plumes is considered negligible and will create no additional impact. It is not clear if the applicant conducted a modeling analysis of vapor plumes to support this conclusion since the SPPE did not contain any analysis.

DATA REQUEST

22. If the applicant performed a visible plume modeling analysis in support of the SPPE Visual Resources conclusion, please provide the following:
    a. modeling results;
    b. any meteorological data used in the analysis;
    c. a full discussion of all assumptions;
    d. the name and version of the model used; and
    e. all model input and output files.

23. If a visible plume modeling analysis was not performed, please provide any analysis that supports the visible water vapor plume discussion and conclusion in the SPPE.

BACKGROUND

Staff intends to conduct a plume modeling analysis using the Combustion Stack Visible Plume (CSVP) model and the Seasonal Annual Cooling Tower Impact (SACTI) model for the El Centro project, as is done for all projects with cooling towers.

DATA REQUEST

24. Please provide the values for heat rejection (MW/hr), exhaust temperature, and exhaust mass flow rate that affect cooling tower vapor plume formation for a range of ambient conditions representing reasonable worst-case operating scenarios. At a minimum, please fill in all blanks in the table below. Staff intends to model the cooling tower using hourly estimated exhaust conditions based on the hourly ambient conditions of the meteorological file. Staff will assume saturated cooling

tower exhaust at the exhaust temperature determined through interpolation for the hourly ambient conditions. Therefore, additional combinations of temperature and relative humidity, if provided by the applicant, will more accurately represent the cooling tower exhaust conditions.

Parameter	**Cooling Tower Exhausts**		
Number of Cells			
Cell Height			
Cell Diameter			
Tower Housing Length			
Tower Housing Width			
Ambient Temperature	20 °F	59 °F	95 °F
Ambient Relative Humidity			
Heat Rejection (MW/hr)			
Exhaust Temperature (°F)			
Exhaust Mass Flow Rate (lb/hr)			

25. Please indicate if the cooling tower has any plume mitigation features that would reduce the exhaust moisture content below the saturated level.
26. Please provide the cooling tower make and model number, and any vendor documentation such as performance tests, vendor guarantees, and details and descriptions of the new mist eliminator for the specific model.
27. Please provide a fogging frequency curve from the cooling tower vendor, if available.
28. Please indicate how many cooling tower cells will be turned on under different potential partial load conditions (i.e., when will all five cells be on, when will four cells be on, when will two cells be on, etc.?). Please also note if ambient conditions, such as cold temperatures, dictate when cells may be turned off.
29. Please indicate whether the cooling tower fan motors will have a variable speed/flow controller. If so, please describe the range of variability.

Technical Area: Waste Management
Author: Ellen Townsend-Hough

BACKGROUND

Staff's analysis includes issues associated with managing wastes generated from constructing and operating the proposed El Centro Unit 3 Repower project. Staff evaluates the proposed waste management plans and mitigation measures designed to reduce the risks and environmental impacts associated with handling, storing, and disposing of project-related hazardous and non-hazardous wastes.

In order to ensure that the El Centro Unit 3 Repower project will not pose a risk to the public or environment, staff needs to determine whether the site was used as a disposal site and whether hazardous waste has been disposed of at this location and the size and nature of any hazardous materials. According to the Phase 1 ESA (Appendix K, page E2), there were small releases of fuel oil from the two 22,000-gallon fuel aboveground storage tanks, and the mercury-containing manometers (devices used to measure pressure) located on the existing Unit 3 boiler have occasionally overflowed and spilled onto the ground.

DATA REQUESTS

30. Please discuss the type of remediation required for the releases from the fuel oil storage tanks at the proposed project site, and provide a remediation schedule.

31. Please discuss any current releases of mercury from the Boiler #3 manometer including the size of the release and whether the releases are being monitored. Please discuss what type, if any, remediation is required for mercury spills at the site.

32. The Phase I ESA recommends further investigation of the project site (Appendix K, page ES-2). Please provide soil sample results for mercury and hydrocarbons to Commission staff.